



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

Case

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/705,447	11/03/2000	Miron Nicolae	2965/MIRON/US	7879

24964 7590 03/27/2003

GOODWIN PROCTER & HOAR LLP
7 BECKER FARM RD
ROSELAND, NJ 07068

EXAMINER

LYONS, MICHAEL A

ART UNIT PAPER NUMBER

2877

DATE MAILED: 03/27/2003 ✓

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/705,447

Applicant(s)

NICOLAE, MIRON

Examiner

Michael A. Lyons

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 42-133 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 42-133 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 88, 101, 111, and 124 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 88, 101, 111, and 124 recite the limitation "said optical portion" in section (a) of each claim. There is insufficient antecedent basis for this limitation in the claim, as it is unclear as to which optical portion, the first or the second, is being referred to by this phrase.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 42-133 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daval et al (3,758,194) in view of Salgo (3,551,051) in further view of Rumbaugh et al (5,710,655).

With regard to claim 42, Daval discloses (Fig. 1) a first plate 11 and a second plate 12. While the coefficient of reflection of these plates is similar, it is well known to change the coefficient of one substrate so its coefficient is higher than that of the first substrate. Daval also discloses an optical medium 10 between the substrates. Daval fails to disclose, however, a beam

Art Unit: 2877

collimating element and an optical converging element, and the plates are semitransparent electrodes, not substrates as claimed.

As for the beam collimating element, using a fiber optic as a collimating element as disclosed in the application is notoriously well known in the art.

As for an optical converging element, Salgo shows (Fig. 4) a lens 160 outside the interferometer to collimate the output beams from the interferometer onto a focused point 162.

As for the substrate, Rumbaugh (Fig. 1a) discloses a cavity thickness compensated etalon filter where the two end plates 10 and 12 are substrates.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add an optical converging lens to the device of Daval as per Salgo to collimate the output beam from the interferometer to a focused point and as per Rumbaugh to provide substrates for the light beams to enter and exit the cavity.

With regard to claim 55, the first substrate, second substrate, beam collimating element, optical medium, and optical converging element are discussed above. In addition, Daval discloses (Fig. 1) a refractive index adjuster V to change the refractive index of the material between the substrates to the desired index. Daval's device fails to show an adjustable spacer, a displacement transducer, and a controller for monitoring the unbalanced operation of the device.

As for the adjustable spacer, Salgo discloses (Fig. 4) a washer 165 that can have its size adjusted to adjust the spacing between the substrates.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add washers to the device of Daval as per Salgo to facilitate the adjustment of the gap between the substrates of the interferometer.

Art Unit: 2877

Regarding the displacement transducer and the controller, these functions can be controlled by computer, and the inclusion of one to the device is well known in the art.

With regard to claim 65, the first substrate, second substrate, beam collimating element, optical medium, and optical converging element are disclosed above. Additionally, Rumbaugh discloses that the substrates of the device are separated by "typically about 10 μm " (Col. 5, line 15-17). This distance is equal to a wavelength of light.

With regard to claim 78, the first substrate, second substrate, beam collimating element, optical medium, optical converting element, adjustable spacer, refractive index adjuster, displacement transducer, and controller and gap distance are discussed above.

With regard to claim 88, the first substrate, second substrate, beam collimating element, optical medium, and optical converging element are disclosed above. While the devices fail to disclose a second transmission optimized portion on the outer surface of the first substrate, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a second transmission optimized portion to the device in order to facilitate the entry of light into the device.

With regard to claim 101, the first substrate, second substrate, beam collimating element, optical medium, optical converging element, adjustable spacer, refractive index adjuster, displacement transducer, and controller are disclosed above. While the devices fail to disclose a second transmission optimized portion on the outer surface of the first substrate, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a second transmission optimized portion to the device in order to facilitate the entry of light into the device.

With regard to claim 111, the first substrate, second substrate, beam collimating element, optical medium, optical converging element, and substrate gap distance are disclosed above. While the devices fail to disclose a second transmission optimized portion on the outer surface of the first substrate, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a second transmission optimized portion to the device in order to facilitate the entry of light into the device.

With regard to claim 124, the first substrate, second substrate, beam collimating element, optical medium, optical converging element, adjustable spacer, refractive index adjuster, displacement transducer, controller, and substrate gap distance are disclosed above. While the devices fail to disclose a second transmission optimized portion on the outer surface of the first substrate, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a second transmission optimized portion to the device in order to facilitate the entry of light into the device.

As for claims 43, 56, 66, 79, 89, 102, 112, and 125 setting the incidence angle of the incoming light to one degree is well known.

As for claims 44, 57, 67, 80, 90, 103, 113, and 126 Salgo discloses a light collimator 136.

As for claims 45, 68, 91, and 114 Salgo discloses a washer 165 used as an adjustable spacer.

As for claims 46, 69, 92, and 115 Daval discloses a refractive index adjuster V.

As for claims 47, 58, 70, 81, 93, 104, 116, and 127, Salgo discloses a voltage source 167.

As for claims 48, 59, 71, 82, 94, 105, 117, and 128, Daval discloses a voltage source V.

As for claims 49, 60, 72, 83, 95, 106, 118, and 129, making spacer a piezoelectric control voltage device is well known.

As for claims 50, 61, 73, 84, 96, 107, 119, and 130, Daval's voltage source is an electro-optical control voltage device.

As for claims 51, 74, 97, and 120, using a computer for the displacement transducer and the controller for monitoring is well known.

As for claims 52, 62, 75, 85, 98, 108, 121, and 131 adding lenses to the lens of Salgo to make a lens system for optical convergence is well known.

As for claims 53, 63, 76, 86, 109, 122, and 132 the output light beams from the device of Salgo are incident upon a single spot at element 162.

As for claims 54, 64, 77, 87, 110, 123, and 133 the use of an optical fiber for the input aperture of the collimated output light is well known.

Response to Arguments

Applicant's arguments with respect to claims 1-41 in the original application prior to the response and amendment have been considered but are moot in view of the new ground(s) of rejection.

Additionally, applicant desires evidence for several features taken as being well known in the art. First, the substrate gap contained in original claim 13 has been addressed in the claim rejections above. The optical fiber usage in original claims 1, 12, 32, and 41 is covered in US Pat. 5,361,155 to Chiaroni et al as disclosed in the applicant's IDS. The use of a computer in the art is disclosed in Fig. 9, element 78 of the Rumbaugh device. US Pat. No. 5,359,760 to Busse et al discloses the use of PZT spacers. Finally, US Pat. No. 5,557,468 to Ip as disclosed in the

applicant's IDS discloses a device with plates having reflective coefficients R_0 and R_1 , wherein $R_0 > R_1$, and R_0 does not equal 100%.

Conclusion

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 30 December 2002 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 703-305-1933. The examiner can normally be reached on Monday thru Thursday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G Font can be reached on 703-308-4877. The fax phone numbers for the

Art Unit: 2877

organization where this application or proceeding is assigned are 703-308-0725 for regular communications and 703-308-0725 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0935.

MAL
March 10, 2003



Samuel A. Turner
Primary Examiner